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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/754,418	01/08/2004	Yohei Yoshida	259052004200	8421

25226 7590 07/11/2006

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755 PAGE MILL RD
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EXAMINER

ARTMAN, THOMAS R

ART UNIT	PAPER NUMBER
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2882

DATE MAILED: 07/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/754,418

Applicant(s)

YOSHIDA, YOHEI

Examiner

Thomas R. Artman

Art Unit

2882

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3,4 and 6-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 3,4 and 6-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 08 January 2004.
- 4) ☒ Interview Summary (PTO-413)
Paper No(s)/Mail Date. 20060619
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

Claim 6 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Line 3 of the claim requires that the light detecting element is arranged so “as not to intercept emitted light.” This is directly contradictory to parent claim 7, lines 3-4, where the claim specifically states that the light detecting element is “for detecting light emitted from each of the light detecting elements.”

Claim 8 is objected to because of the following informalities: the phrase “any of” in line 2 appears to have been inadvertently kept. The examiner suggests deleting the phrase.

Appropriate correction is required.

Allowable Subject Matter

The indicated allowability of claim 7 is withdrawn in view of the newly discovered reference(s) to Marshall, Pashley, Null and Berstis. Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3, 4, and 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marshall (US 6,741,351 B2) and Pashley (US 6,127,783), which is commonly owned and incorporated by reference in Marshall, col.1, lines 39-40, in view of Null (US 6,888,323 B1).

Regarding claim 7, Marshall discloses a light-emitting device (Figs.1, 5, 6, 8 and 9), including:

a) a plurality of light emitting elements 10, 12, 14 for emitting light of mutually different colors (col.1, lines 29-32),

b) at least one light detecting element 24 for detecting light emitted from each of the light emitting elements,

c) the light emitting elements and the light detecting element are mounted onto a substrate where the plurality of light emitting elements comprise three light emitting chips for emitting light of a first, second and third color, respectively (Figs.5 and 6),

d) a light emission control portion (part of item 30) for applying a predetermined current to the light emitting elements and allowing the three chips to serially emit light with a predetermined time interval among them (col.1, lines 29-35), and

e) a light intensity portion (part of item 30) for serially receiving detection signals 26 outputted from the light detecting element that corresponds to the intensity of the light, analyzing the detector signals and adjusting the current applied to each of the three light-emitting chips in order to generate a predetermined color (Fig.9).

Neither Marshall nor Pashley specifically disclose the detection of external light during a timeframe when none of the light emitting elements emit light, and then adjusting the drive currents in response to the signal.

Null teaches the practice of detecting external light incident into the light detecting element when none of the light emitting elements are emitting light (col.5, lines 10-14). In this control manner, energy is saved since the light is only turned on as needed, that is, when the room becomes dark.

It would have been obvious to one of ordinary skill in the art at the time the invention was made for the light emission control to allow the light detecting element to detect external light when none of the light emitting elements emit light in order to automatically turn on the light when a room gets dark, such that energy is saved, as taught by Null.

With respect to claims 3 and 4, the light detecting element 164 is arranged at a position substantially equidistant from the first, second and third light emitting elements 161-163 emitting the first, second and third colors, respectively, where the light emitting elements are arranged at the apexes of an equilateral triangle with the light detecting element in the middle (mass center).

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With respect to claim 6, the three light emitting chips are arranged on a substrate, and the light detecting element is so arranged as not to intercept emitted light.

With respect to claim 8, the claim recites an intended use of the apparatus as a backlight for an LCD display. Such intended use does not confer structural definition to the device of parent claim 8; therefore, the claimed invention is not distinguished over the prior art of record, and thus the claim does not carry patentable weight.

Claims 3, 4 and 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamanti (US 6,157,453) in view of Berstis (US 6,674,530 B2)

Regarding claim 7, Tamanti discloses, in figure 1 and throughout the disclosure, a light-emitting device comprising:

- a plurality of light-emitting elements (Ir,Ig,Ib) for emitting light of mutually different colors; and
- one light-detecting element (7) for detecting light emitted from each of the light-emitting elements;
 - the light-emitting elements and the light-detecting element being mounted onto a substrate (not shown);
- the plurality of light-emitting elements comprising three light-emitting chips for emitting light of a first, second and third color, respectively (column 8, line 20);

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- a light emission control portion (10) for applying a predetermined current to the light-emitting elements and allowing the three light-emitting chips to serially emit light with a predetermined time interval among them (column 8, lines 66-67); and
- a light intensity adjustment portion for serially receiving detecting signals outputted from light-detecting element in such a fashion as to correspond to intensity of light, analyzing the detection signals and adjusting the current applied to each of the three light-emitting chips so that a predetermined color can be generated (column 9, lines 1-25).

Tamanti does not specifically disclose the detection of external light during a timeframe when none of the light emitting elements emit light, and then adjusting the drive currents in response to the signal.

Berstis teaches an RGB device with serial illumination and detection of each light emitting element (Fig.2A and 2B; col.4, lines 52-62). Berstis further teaches the practice of measuring the color balance of ambient light (external light) that is incident into the light detecting element for adjusting the drive current of the light emitting elements accordingly (col.3, lines 13-32), where the measurement necessarily takes place while the light emitting elements are not emitting light. In this way, signal noise caused by external light is minimized for improved, accurate and precise color measurement.

It would have been obvious to one of ordinary skill in the art at the time the invention was made for Tamanti to detect external light while the light emitting elements do not emit light in order to adjust the drive currents of the light emitting elements for greater accuracy and precision in color measurement, as taught by Berstis.

With respect to claims 3 and 4, Tamanti does not specifically disclose the arrangement of the light emitting elements with respect to the light detecting element.

Berstis teaches an arrangement where the light detecting element is equidistant from the light emitting elements, specifically, the light emitting elements are arranged at the apexes of an equilateral triangle with the light detecting element in the middle (Fig.2B). As is known in the art, the distance dependence upon the relative intensities of each light emitter that are detected is minimized. Thus, the relative intensities of each light emitter are a function of the measured color, and not a function of different path lengths between the emitters and the detector.

It would have been obvious to one of ordinary skill in the art at the time the invention was made for Tamanti to arrange the light emitters in an equilateral triangle and the light detector in the middle in order to improve the accuracy of the measurements by setting the emitters at equal distances from the detector, as taught by Berstis and is known in the art.

With respect to claim 6, the light detecting element is arranged with respect to the three light emitting chips of the Tamanti/Berstis combination as not to intercept emitted light.

With respect to claim 8, the claim recites an intended use of the apparatus as a backlight for an LCD display. Such intended use does not confer structural definition to the device of parent claim 8; therefore, the claimed invention is not distinguished over the prior art of record, and thus the claim does not carry patentable weight.

Conclusion

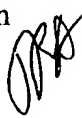
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hashimoto (US 6,952,002 B2) teaches the practice of adjusting the luminance of an LED in the event that ambient light is insufficient for measurements. Miller (US 6,373,568 B1) teaches another color measurement device with multiple LEDs. Ryczek (US 5,471,052) teaches the practice of using a secondary detector for detecting a portion of the LED light for correcting the output of the primary detector.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas R. Artman whose telephone number is (571) 272-2485. The examiner can normally be reached on 9am - 5:30pm Monday - Friday.

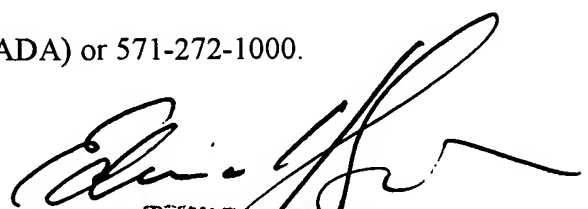
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Thomas R. Artman
Patent Examiner



6/19/06



EDWARD J. GLICK
SUPERVISORY PATENT EXAMINER